

Appl. No. 09/758,263

Response to Office Action of August 24, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously presented): A method of modifying a cornea of an eye having a main optical axis, comprising the steps of:

aiming a laser at the cornea,

firing the laser at the cornea, the laser separating the internal area of the cornea offset from the main optical axis into first and second internal surfaces to form a corneal flap, a portion of which remains attached to the cornea by an area located at the main optical axis, the first internal surface facing in a posterior direction of the cornea and the second internal surface facing in an anterior direction of the cornea, wherein a peripheral edge of the corneal flap forms an arc at least partly around the main optical axis, the peripheral edge being movable relative to the second surface,

lifting the corneal flap at the peripheral edge,

introducing an ocular implant in between the first and second internal surfaces, and

placing the corneal flap over the ocular implant to form a new curvature for the exterior surface of the cornea.

Claim 2 (Original): A method according to claim 1, wherein

the firing step includes firing the laser at the cornea so that the corneal flap is substantially ring-shaped.

Claim 3 (Original): A method according to claim 1, wherein

the firing step includes firing the laser at the cornea so that the corneal flap is substantially arcuate.

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Claim 4 (Original): A method according to claim 1, wherein
said ocular implant is a corrective lens with at least a portion having a refractive index
that is different from that of the cornea.

Claim 5 (Original): A method according to claim 1, wherein
the introducing step includes introducing an ocular implant that is substantially ring-
shaped.

Claim 6 (Original): A method according to claim 1, wherein
the introducing step includes introducing an ocular implant that is substantially arcuate.

Claim 7 (Original): A method according to claim 1, wherein
the introducing step includes introducing the ocular implant so that the ocular implant at
least partially encircles the main optical axis.

Claim 8 (Original): A method according to claim 1, wherein
the steps of aiming and firing a laser include aiming and firing an ultrashort pulse laser.

Claim 9 (Original): A method according to claim 8, wherein
the steps of aiming and firing a laser include aiming and firing a laser selected from a
group consisting of a femtosecond laser, a picosecond laser and an attosecond laser.

Claim 10 (Original): A method according to claim 1, further including the steps of
aiming a second laser at the cornea, and
firing the second laser at an external surface of the cornea to ablate a portion of the
external surface of the cornea.

Claim 11 (Original): A method according to claim 10, wherein
the steps of aiming and firing the second laser at the surface of the cornea to ablate a
portion of the external surface of the cornea include aiming and firing the second laser at the
portion of the corneal flap that remains attached to the cornea by an area located at the main
optical axis.

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Claim 12 (Previously presented): A method according to claim 10, wherein
the steps of aiming and firing a second laser at the external surface of the cornea include aiming and firing an excimer laser at the cornea.

Claim 13 (Previously presented): A method of modifying a cornea of an eye having a main optical axis, comprising the steps of

aiming an ultrashort pulse laser at the cornea,

firing the ultrashort pulse laser at the cornea, the laser separating the internal area of the cornea offset from the main optical axis into first and second substantially ring-shaped internal surfaces to form a corneal flap, a portion of which remains attached to the cornea by an area located at the main optical axis, the first internal surface facing in a posterior direction of the cornea and the second internal surface facing in an anterior direction of the cornea, wherein a peripheral edge of the corneal flap forms an arc at least partly around the main optical axis, the peripheral edge being movable relative to the second surface,

lifting the corneal flap at the peripheral edge,

introducing a substantially ring-shaped ocular implant in between the first and second internal surfaces so that the ocular implant at least partially encircles the portion of the cornea that remains attached to the cornea by an area located at the main optical axis,

placing the corneal flap over the ocular implant to form a new curvature for the exterior surface of the cornea,

aiming a second laser at the cornea, and

firing the second laser at an external surface of the cornea to ablate a portion of the external surface of the cornea.

Claim 14 (Original): A method according to claim 13, wherein

the steps of aiming and firing a laser include aiming and firing a laser selected from a group consisting of a femtosecond laser, a picosecond laser and an attosecond laser.

Claim 15 (Original): A method according to claim 13, wherein

the steps of aiming and firing a second laser at the surface of the cornea to ablate a portion of the external surface of the cornea include firing the laser at the portion of the corneal flap that remains attached to the cornea by an area located at the main optical axis.

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Claim 16 (Previously presented): A method according to claim 13, wherein
the steps of aiming and firing a second laser at the cornea include aiming and firing an
excimer laser at the external surface of the cornea.

Claims 17-22 (Cancelled)

Claim 23 (Previously presented): A method of modifying a cornea of an eye having a main
optical axis, comprising the steps of

separating the internal area of the cornea offset from the main optical axis into first and
second substantially ring-shaped internal surfaces to form a corneal flap, a portion of which
remains attached to the cornea by an area located at the main optical axis, the first internal
surface facing in a posterior direction of the cornea and the second interior surface facing in an
anterior direction of the cornea, wherein a peripheral edge of the corneal flap forms an arc at
least partly around the main optical axis, the peripheral edge being movable relative to the
second surface,

lifting the corneal flap at the peripheral edge,

introducing a substantially ring-shaped ocular implant in between the first and second
internal surfaces so that the ocular implant at least partially encircles the portion of the cornea
that remains attached to the cornea by an area located at the main optical axis,

placing the corneal flap over the ocular implant to form a new curvature for the exterior
surface of the cornea,

aiming a laser at the cornea, and

firing the laser at an external surface of the cornea to ablate a portion of the external
surface of the cornea.

Claim 24 (Original): A method according to claim 23, wherein

the steps of aiming and firing a laser at the surface of the cornea to ablate a portion of the
external surface of the cornea include firing the laser at the portion of the corneal flap that
remains attached to the cornea by an area located at the main optical axis.

Claim 25 (Original): A method according to claim 23, wherein

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the steps of aiming and firing a laser at the cornea include aiming and firing an excimer laser at the external surface of the cornea.